

What is claimed is:

1. A submersible pumping system for pumping wellbore fluid, comprising:

a rotatable shaft; and

a mechanical seal substantially surrounding the shaft for preventing the flow of

5 wellbore fluid along the shaft, the mechanical seal comprising:

a spring surrounding the shaft and providing an axial force along the
shaft;

a spring retainer affixed to the shaft and having a detent to hold the
spring; and

10 a runner in interlocking engagement with the spring retainer and
accommodating the spring, wherein the interlocking engagement
causes the runner to rotate with the spring retainer while
permitting axial movement of the shaft relative to the runner.

15 2. The submersible pumping system of claim 1, wherein the runner further
comprises an o-ring that abuts the shaft.

3. The submersible pumping system of claim 1, wherein the spring retainer is
affixed to the shaft with a set screw.

20 4. The submersible pumping system of claim 1, wherein the mechanical seal
further comprises a mating ring that substantially encircles the shaft and contacts the
runner.

5. The submersible pumping system of claim 4, wherein the submersible pumping system further comprises a housing and the mating ring further comprises an o-ring that abuts the housing.

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6. The submersible pumping system of claim 1, further comprising a snap ring adjacent the spring retainer and fixed to the shaft wherein axial movement of the mechanical seal is prevented.

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7. A seal section for use with submersible pumping system for pumping wellbore fluid, comprising:

a rotatable shaft; and

a mechanical seal substantially surrounding the shaft for preventing the flow of wellbore fluid along the shaft, the mechanical seal comprising;

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a spring surrounding the shaft and providing an axial force along the shaft;

a spring retainer affixed to the shaft and having a detent to hold the spring; and

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a runner in interlocking engagement with the spring retainer and accommodating the spring wherein the interlocking engagement causes the runner to rotate with the spring retainer while permitting axial movement of the shaft relative to the runner.

8. The seal section of claim 7, wherein the runner further comprises an o-ring that abuts the shaft.

9. The seal section of claim 7, wherein the spring retainer is affixed to the shaft with a set screw.

10. The seal section of claim 7, wherein the mechanical seal further comprises a mating ring that substantially encircles the shaft and contacts the runner.

11. The seal section of claim 10, wherein the seal section further comprises a housing and the mating ring further comprises an o-ring that abuts the housing.

12. The seal section of claim 7, further comprising a snap ring adjacent the spring retainer and fixed to the shaft wherein axial movement of the mechanical seal is prevented.

13. A mechanical seal for use with a rotatable shaft for preventing the flow of fluids along the shaft, the mechanical seal comprising:

a spring surrounding the shaft and providing an axial force along the shaft;

a spring retainer affixed to the shaft and having a detent to hold the spring; and

a runner in interlocking engagement with the spring retainer and accommodating

the spring wherein the interlocking engagement causes the runner to

rotate with the spring retainer while permitting axial movement of the shaft relative to the runner.

14. The mechanical seal of claim 13, wherein the runner further comprises an o-ring that abuts the shaft.

15. The mechanical seal of claim 13, wherein the spring retainer is affixed to the shaft with a set screw.

16. The mechanical seal of claim 13, further comprising a mating ring that substantially encircles the shaft and contacts the runner.

17. The mechanical seal of claim 16, wherein the mating ring further comprises an o-ring at the outside diameter of the mating ring.

18. The mechanical seal of claim 13, further comprising a snap ring adjacent the spring retainer and fixed to the shaft wherein axial movement of the mechanical seal is prevented.

19. A submersible pumping system for pumping wellbore fluid, comprising:
a rotatable shaft; and
means for preventing the flow of wellbore fluid along the shaft.